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ABSTRACT

This paper is designed to provide college and university presidents with an overview of distance education, e-learning, or what is called "distributed learning," a term preferred here because "distance" is too restrictive a concept. This overview identifies significant issues associated with distributed education and suggests questions to help institutional leaders establish and validate their options. The paper considers these issues: (1) challenging assumptions about distributed learning; (2) student learning; (3) strategic goals; (4) intended audiences; (5) market size and growth of distance education; (6) governance and organization; (7) partnerships; (8) quality; (9) policies; (10) barriers; and (11) leadership challenges. Six appendixes provide supplemental information, including a comparison of target markets among selected providers and guidelines for distance education. Policies designed to remove the barriers to widespread adoption of distance education must come from all levels so that the many benefits of distributed education, particularly for students, can become available. (Contains 24 references.) (SLD)

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FIRST IN A SERIES

Distributed Education and Its Challenges: An Overview

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U.S. DEPARTMENT OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

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Distributed Education: Challenges, Choices, and a New Environment

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Abstract

Distance or distributed education is one of the most complex issues facing higher education institutions today. This paper is designed to provide college and university presidents with an overview of distance education, e-learning, or what we prefer to call distributed learning. We prefer the term *distributed* learning over *distance* education because "distance" is too restrictive a concept.

Few institutions will be untouched by the discussion and debate surrounding distributed education. As a result, institutional leaders will need to understand its implications for themselves and their institutions. This first paper in the ACE/EDUCAUSE series, *Distributed Education and Its Challenges: An Overview*, provides a general framework for understanding the key questions that distributed education poses to the higher education community.

This overview paper identifies significant issues associated with distributed education and suggests a series of questions to help institutional leaders establish and validate their options. We encourage institutions to use this paper as a primer and hope that it will catalyze in-depth, strategic discussions. In addition to framing the issues for various stakeholders, the paper outlines topics that will be addressed thoroughly in future monographs in the series, including issues of quality control and leadership.

Foreword

Distributed Education and Its Challenges: An Overview is the first monograph in a series of invited papers on distributed education commissioned by the American Council on Education (ACE) and EDUCAUSE. The purpose of the series is to provide presidents, provosts, and other senior decision-makers with a sense of the landscape of technologically mediated education and a means to make wise strategic choices.

This paper describes the "big picture" and frames issues facing college and university leaders confronting rapid change in both the forms and frameworks for delivering learning. Some of the challenges of the new learning environments discussed in this paper include market size and growth, governance and organization, partnerships, quality, barriers, and leadership challenges. Future papers in the series will develop these themes in greater detail.

The genesis for this series evolved from a design meeting held at ACE in spring 1999. Extensive discussion and exploration of major issues led to a partnership with EDUCAUSE and a close working relationship with its president, Brian L. Hawkins, and vice president, Carole A. Barone.

This series, *Distributed Education: Challenges, Choices, and a New Environment*, has been sustained with generous support from the AT&T Foundation, Accenture, and the Compaq Corporation.

"Distance" or "distributed" learning raises a strategic and financial challenge for every type of higher education institution. Advancements in technology and expansion of markets for distributed learning pose questions for college and university presidents, regardless of their institutional mission. Our goal in this series is to provide leaders with tools that help them ask the right questions about technology and higher education.

Michael A. Baer
Senior Vice President, Programs & Analysis
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Introduction

Technology is having a dramatic effect on colleges and universities, producing what may be the most challenging period in the history of higher education. One manifestation of the convergence of technology and education is distributed learning.

The World Wide Web provides alternative means for the delivery of courses and services, providing learners with an extraordinary range of options. In fact, the web is affecting how students learn. It has altered the competitive landscape in higher education and is a catalyst in the creation of new business models whose impact is being felt at the core of our institutions.

What do we mean by "distance education," "e-learning," or "distributed learning"? Does it occur at a distance? Is it synchronous? Asynchronous? Is it an extension of the classroom or a replacement of it? Is it really location-independent learning, distance-less education, or time-enhanced learning?

Distance learning is a subset of distributed learning, focusing on students who may be separated in time and space from their peers and the instructor. *Distributed learning* can occur either on or off campus, providing students with greater flexibility and eliminating time as a barrier to learning. A common feature of both distance and distributed learning is technology. Regardless of whether students are on campus or online, there are many implications of integrating technology into education, i.e., in making learning distributed. As a result, much of our discussion focuses on the broader issue of distributed learning.

Distance education and on-campus instruction are converging, with online delivery systems and approaches being employed for distant, commuting, and residential students. This convergence of "clicks and mortar" in the form of technology-mediated education is distributed learning.

Distributed learning is much more than an online substitute for lectures. Distributed learning extends the opportunities for interaction between faculty and student, incorporating simulations and visualizations, as well as collaborative learning. In fact, the "anytime, anyplace" nature of this new set of electronic educational opportunities may well have its greatest impact on residential education. Not only does distributed learning occur anywhere and at any time, but these conditions can be modified along a number of dimensions.

Customization may hinge on differences in learner backgrounds or variation in basic academic preparation. The learning experience also may be tailored to accommodate those with learning disabilities or alternative learning styles. Distributed learning environments may augment traditional instruction through reinforcement–by providing the opportunity to explore a subject in much greater depth, allowing learners to study the material on their own time, or to gain additional experience outside of the defined classroom times or homework assignments. In distributed learning, the learning experience is no longer bounded by the length of the class session.

With learning material available 24 hours a day, 7 days a week, time is no longer a limitation to learning.

Distributed learning, rather than distance education, will become the dominant paradigm for higher education–although, in the short term, institutions are confronted with a multitude of challenges associated with the "distance" component.

The future of distributed learning–and of higher education–will not be a one-size-fits-all approach. Far from spelling the demise of traditional classroom education, online learning (i.e., learning environments that use the Internet and/or the web) allows for differentiation of institutions, learning styles, and pedagogy. The variations provided by online learning environments will not only rival–but are likely to surpass–the diversity of types of institutions that currently characterizes American higher education.

There are three axioms that illustrate this nexus of technology and education:

- New technology affords exciting opportunities for more effective learning.
- New technology offers the prospect of reaching more learners.
- New technology will transform higher education as we know it today.[1]

Certainly one could argue that all of these statements are true, but how they will actually manifest themselves is difficult to predict. What is clear is that distributed education, and specifically technology-enhanced learning environments, are challenging our historical assumptions about how postsecondary institutions will educate students and deliver services–even what our roles as institutions will be.

The question, What are you doing about distance education? often seems to come with the assumption that everyone should be doing something. But is "doing something" synonymous with "doing the right thing"? What issues are of critical importance? How should institutions decide?

As Internet start-ups move into the traditional higher education realm, concern is mounting. If the pressure to move to distributed learning is not coming from external forces, there are plenty of internal ones demanding attention. In an era when many students have never known life without the Internet, when time is constrained for adult learners seeking additional education, and when worldwide demand for education is at an all-time high, the classroom no longer bounds the learning environment.

The possibilities represented by distributed learning are great, as are the challenges it brings. Focusing on a series of challenges and issues is not intended to dissuade institutions from becoming actively involved in distributed learning but to highlight the organizational, policy, and cultural challenges that should be considered. This paper spans issues such as

- Student learning.
- Strategic goals and intended audiences.
- Market dynamics.
- Organization and governance.
- Partnerships.
- Quality.
- Policy.
- Barriers.
- Leadership challenges.

There are few clear answers to the challenges raised by distributed learning. The environment is in a state of constant churn. However, few institutions have the luxury of waiting until the future becomes obvious. Each institution needs to determine the mix of objectives and actions that best fits its unique mission, history, culture, and values. We hope this paper will clarify the options associated with distributed learning, help leaders engage their constituencies in a dialogue, and chart a path through higher education's most dynamic era.

Challenging Assumptions

When most of us think about higher education, we automatically make dozens of assumptions. For learning, the course is often the basic unit of measure that we presume. Program length is measured in semesters or quarters. Teaching is handled by faculty. Students pay tuition. Courses originate from within, rather than outside, the institution.

Some other common assumptions about higher education include

- We know the student profile and learner preferences for learning and service delivery.
- Student credit hours (SCH) and full-time equivalents (FTE) are relevant units of measure in distributed education.
- Completion of the curriculum is the measure of competency.
- Traditional institutional models (e.g., for classroom instruction, governance, and financing) will be successful in an e-learning world.
- Higher education must provide all components of the educational process (e.g., content, curriculum, services, and credentialing).
- External providers of educational services (e.g., courses or tutoring from an Internet start-up) are inherently bad or of lower quality than educational institutions.
- Quality is better in a not-for-profit organization than in a for-profit one.
- High quality will drive out low quality.
- The market will continue to support 3,700 postsecondary institutions.
- Distributed learning is a viable option for all postsecondary education institutions.
- The faculty member is the focal point of the learning process.
- All higher education institutions must develop their own distributed learning programs.

Although these assumptions characterize our current system, they may not apply to distributed learning. Many of our current policies, organizations, and definitions are either inadequate or inappropriate for distributed learning. The notion of credit for seat time has sustained our current model of higher education, but will it suffice for a future represented by distributed learning?

Student Learning

An increasing body of evidence suggests that the Internet changes the way that people work and learn. In fact, the web is seen by many as a transformative technology for learning. It has already "transformed" many of today's youth.

For example, the web is the first medium that honors the notion of multiple intelligences—abstract, textual, visual, musical, social and kinesthetic. Educators can now construct learning environments that enable students to become engaged in learning any way the student chooses. The anytime, anyplace nature of the web allows students to spend as much time as they need searching for information, running simulations, or collaborating with peers.[2]

The Information-Age Mindset

Most students entering our colleges and universities today are younger than the microcomputer, are more comfortable working on a keyboard than writing in a spiral notebook, and are happier reading from a computer screen than from paper in hand. For them, constant connectivity—being in touch with friends and family at any time and from any place—is of utmost importance.

The many new attributes of student behavior will have a profound impact on our educational institutions. Frand has identified 10 attributes reflecting values and behaviors that make up "the information age mindset." They are

- Computers aren't technology.
- The Internet is better than TV.
- Reality is no longer real.
- Doing is more important than knowing.
- Nintendo (trial-and-error; experimentation) is preferable to logic.
- Multitasking is a way of life.
- Typing is preferable to handwriting.
- Staying connected is essential.
- There is zero tolerance for delays.
- The lines between consumer and creator are blurring.

Frand concludes that the outlook of those we teach has changed and thus the way in which we teach must change. The world in which we all live has changed and thus the content we teach must change. The industrial Age has become the Information Age and thus the way we organize our institutions must change, as must the meaning we attach to the terms "student," "teacher," and "alumnus." The challenge will be for educators and higher education institutions to incorporate the information-age mindset of today's learners into our programs so as to create communities of lifelong learners.[3]

to Ask:

- What kind of support do faculty need to develop engaging and empowering online environments?
- Are we using the unique capabilities of the web to make learning environments engaging and effective?
- Do we know which students will learn best at a distance and those for whom it is a poor choice?

Beyond the fundamentally different characteristics of the web, those who have grown up "digital" actually work and think differently. It is no longer safe to assume that they learn as we do. For instance, today's young people multiprocess—they do several things simultaneously (e.g., listen to music, talk on the cell phone, and use the computer, all at the same time). Adults tend to think that young people who are multiprocessing must not be concentrating. This may not be true. The attention span of teens often is between 30 seconds and five minutes—a figure that parallels that of top managers who operate in a world of tight deadlines, executive summaries, and rapid decisions.[4]

Whether or not one grew up digital, today's literacy (referred to by some as "postdigital literacy") involves not only text but also image and screen literacy. This new literacy is one of information navigation. Students today navigate the Internet, assembling knowledge from fragments of information as opposed to visiting a library. This new form of information retrieval enables students to be their own personal reference librarians who know how to navigate through confusing, complex information spaces and feel comfortable doing so. Information navigation may be the main form of literacy for the 21st century.[5] However, students need guidance in developing taste and discrimination in the selection of information on the Internet.

Another shift deals specifically with learning. Most of us experienced formal learning in an authority-based, lecture-oriented environment. Now, with incredible amounts of information available on the web, learning through discovery is becoming preeminent. Our generation tends not to want to try things unless we know how to use them. Today's learners want to "turn the thing on, get in there, muck around, and see what works. Today's kids get on the web and link, lurk, and then try it themselves."[6]

The web holds a number of implications for learning environments as well as for the type of students we are educating.

- *Exploration:* E-learners use the web as an exploratory tool to access a plethora of information and resources.
- *Experience:* The web offers e-learners a comprehensive learning experience, from synchronous learning to threaded discussions to self-paced study.
- *Engagement:* The web captivates learners by enabling creative approaches to learning that foster collaboration and a sense of community.
- *Ease of use:* The web is easy to use not only for learners, but for learning providers as well. Content can be made immediately available to learners across all technical platforms (e.g., Windows and Unix).
- *Empowerment:* The web puts learners in the driver's seat with a set of tools that enables personalization of content and allows learners to choose the way in which they best learn.[7]
- *Effectiveness:* There is a growing body of evidence that, owing to the ability to create customized learning environments on the web, distributed education is more effective than the classroom lecture and the traditional relationship between student and faculty member.[8,9,10]

Strategic Goals

Distributed learning represents a major institutional commitment. As such, it should align with institutional goals and resource allocations. However, for too many institutions, the motivation is best expressed as the sense that everyone else is doing it. Does distributed learning support a specific strategic goal for the institution or is the rationale muddled? To gain the commitment of all those who must support a major initiative (board, executive cabinet, faculty, staff, etc.) it is important to articulate clearly the strategic goals behind the institution's interest in distributed learning. For example, what is the institution's commitment to educational access? Would distributed education enhance the fulfillment of that goal? Will it seem inconsistent with policies on selectivity and/or the importance of the residential experience? Does distributed education complement the institution's mission, culture, and historic strengths or does it create discord? An institution may have multiple, and potentially conflicting, motivations for distributed education. Even conflicting motivations can be legitimate. The challenge to institutional leaders is to sort out the motivations and rationales.

The institutional motivation(s) driving distributed learning often fall into one of four broad categories:

Expand access. Most states need to expand access to meet the education and training needs of state residents and businesses, as well as to provide education to underserved populations.

Alleviate capacity constraints. Many institutions are expecting more college students than their facilities can accommodate in the next decade. Some colleges and universities hope to leverage the scalability of distributed learning to avoid their existing bricks-and-mortar capacity constraints.

Readiness Topology

To help institutions better assess their readiness to move into distributed education, EDUCAUSE's National Learning Infrastructure Initiative (NLII) is developing the Readiness Topology. The "READY" project is a web-based decision tool organized around the concept of institutional readiness for several transformative goals—including distributed education. The tool guides users through a series of considerations to help them understand their institution's current situation as well as to develop a meaningful plan to improve their readiness.

This decision support tool provides both a conceptual framework for distributed education as well as some practical advice on programs and policies that institutions will likely want to have in place as they begin a distributed learning program. The self-assessments should empower institutions to apply scarce resources strategically.

To view the pilot site, go to **http://www.educause.edu/ready**. Although the site is under construction, it is a valuable tool for use by individuals as well as groups.

to Ask:

- Does the institution have a clear rationale for distributed education?
- How does this rationale align with existing programs and the institutional mission?
- How broadly has the rationale been communicated?

Generate new revenue. The quest for lifelong learning has increased the demand for higher education across all age groups. Many institutions hope to generate new revenue from distance education by targeting emerging segments such as international education or working adults.

Serve as a catalyst for institutional transformation. Institutions are being challenged to adapt rapidly in a more competitive environment. Many are using information technology (IT) as the impetus to rethink content and pedagogy. Others are finding it the best tool for addressing information age learning styles. Whether focusing on the learning environment, student services, or even back-office operations (e.g., student record systems), IT and distributed learning are being used as catalysts to stimulate institutional transformation.[1]

In fact, most institutions are motivated by more than one of these goals. However, it is doubtful that any institution will be able to meet all four goals with a single model of distributed education. The organizational structure, governance, programmatic emphasis, and/or financial model required may be different, depending on the strategic goal.

Intended Audiences

In addition to the rationale, it is important to know who distributed education is intended to serve. Adult learners can be quite different from 18-year-old freshmen–from their learning styles, to the support they require, to their programs of interest.

The intended audience for distributed education can be segmented into numerous categories, ranging from traditional students seeking additional flexibility to "recreational learners" engaged in expanding their personal knowledge. Segment definitions may depend on factors such as the goals of the learner, the individual's maturity level, and who makes the purchasing decision.

The following is a sample set of learner segments:

- *Corporate learners* work for corporations and are seeking education to maintain or upgrade their skills. The purchasing decision is made by the employing corporation and not by the individual acting alone.
- *Professional enhancement learners* are seeking to advance their careers or shift careers. They are working adults who make the educational purchasing decision on their own.
- *Degree-completion adult learners* are working to complete a degree at an older age. They frequently are working adults who must balance work and family needs with their educational goals.
- *College experience learners* are preparing for life (a.k.a. the traditional student). This segment includes many of the 18- to 24-year-old residential college students for whom the coming of age process is almost as important as academic achievement.
- *Pre-college (K-12) learners* are interested in doing baccalaureate-level work prior to the completion of high school. This segment may be interested in getting a jump start on college.
- *Remediation and test preparation learners* are focused on learning as a prerequisite to an examination or enrollment in another program.
- *Recreational learners* are interested in education for its own sake. They enjoy learning and view additional education as a hobby or as a source of personal enjoyment.[12]

Some segments, such as corporate learners and professional enhancement learners, are being targeted by for-profit companies as well as traditional educational providers (see Appendix I for a comparison of segments and sample providers). Many of these "competitors" represent multi-institutional partnerships that allow a company to leverage content from educational providers who have expertise in serving specific segments.

Note that the features of these target audiences are different. These characteristics drive specific distributed education components such as courses/curricula, pedagogy, or marketing. The types of programs that are likely to be successful with K-12 learners (e.g., advanced placement) are distinct from those for corporate learners. Services may vary, as

to Ask:

- Who are the intended audiences for distributed education?
- Is the institution prepared to allocate the resources required to support the instruction modality appropriate for the intended audience?
- Does the choice of intended audience complement existing campus-based program(s)?

well. Test preparation learners may value tutoring services; recreational learners are less likely to do so. The type of instructional support required by faculty members also will vary depending upon the modality of instruction appropriate for the intended audience.

In the case of actual *distance* education, how the institution markets its offerings will vary. Selling a distance education program to a multinational corporation with thousands of learners differs from marketing remedial courses to individual learners. Other factors may vary as well, such as the strength of a particular institution's image and the capital required to be successful in a specific segment.

Market Size and Growth of Distance Education*

One reason that *distance* education has attracted so much attention in the past few years is the recognition that the higher education market is large and growing. The United States currently spends $740 billion a year on education (at all levels), more than is spent on national defense and more than the gross domestic products of Spain, Brazil, or Canada.[13] Distance education is expected to grow at a compound annual growth rate of 33 percent, according to International Data Corporation. Analysts predict that distance education demand will increase from 5 percent of all higher education students in 1998 to 15 percent by 2002.[14]

Unfortunately, it is all too easy to get carried away with such projections. Before initiating a distance education program, an institution must consider whether it is in a strong competitive position relative to other higher education institutions or to e-learning start-ups. How much can an institution afford to invest (and for how long) in an effort to capture that demand? While it is attractive to think about replicating a single course to hundreds of thousands of learners around the world, this represents a massive assumption. Can any course, offered from a single cultural perspective and by a sole institution, be successful? Although there is great potential for distance education, there is also a great deal of hype and hyperbole.

Among some U.S. colleges and universities that have developed aggressive distance learning programs, the reported growth rates (from 1999–2000 to 2000–2001) range from 200 percent (Pennsylvania State University's World Campus) to over 1,000 percent (University of Maryland's University College).[15] While the success of these institutions should be applauded, it would be unwise to assume that these growth rates can be emulated without considerable time, investment, expertise, and development of sound strategies.

Many successful distance education programs are based on years of experimentation with pedagogy and delivery systems. Establishing technical infrastructure and support programs may require millions of dollars and take years to develop. Investments can exceed $1 million per course. Will late entrants find themselves inexperienced and undercapitalized? Will they enter a market that already has been picked clean of the lucrative and high-demand courses and programs that are most in demand?

Despite such concerns, optimism continues to permeate the market. Those in U.S. higher education have not only come to believe that the distance education market is large, growing, and profitable, but that the appeal of a U.S. degree in the international market is great. The sheer numbers of potential worldwide learners has encouraged some to speculate that e-learning from U.S. institutions can capture a portion of the ever-increasing global audience.

* Here we are referring specifically to programs targeted at learners geographically removed from the traditional campus.

to Ask:

- If we choose to offer distance education programs, can we invest sufficiently in new ventures without undercutting existing programs?
- How much risk is the institution willing to assume by moving into distance education?
- Who are the competitors in each chosen segment of distance education? How strong is the institution compared to the competition (e.g., quality of offerings, name-recognition, and financing)?

Before U.S. higher education succumbs to the market allure of millions of potential learners, some assumptions should be questioned. While a U.S. degree is highly prized, it is still open to debate whether large numbers of learners will gravitate to American distance education offerings. First, many cannot access Internet-based education. Second, some may not be able to take advantage of instruction provided in English. Third, international learners may be expecting different content from Americans taking the same course. Finally, there are competitors for these learners.

Governance and Organization

Success in the emerging distributed learning environment is likely to require different organizational structures from those that currently exist in traditional institutions. The characteristics often identified as critical for success in this new world of e-business and e-learning include

- *Speed:* How quickly can the organization respond to change?
- *Money:* How much funding is available for new projects? Who controls the money?
- *Talent:* Do we have the best people to get the job done?
- *Alignment:* How well aligned is e-learning with the rest of the institution?

Although higher education strives to be responsive to learners' needs, many of our processes and traditional timetables make us anything but nimble. How long does it take to approve a new course? What is the average timeline for endorsing and launching a new degree program? Can a textbook be written and printed before its information half-life has passed? Internet time has had little impact on many of our processes. To be competitive and successful, distributed education will require a governance model with a level of dynamism and flexibility dramatically different from traditional faculty governance models. It is highly unlikely that "bolting on" a distributed learning model to our existing structures will achieve the needed flexibility, nimbleness, and responsiveness.[16]

Governance and organization choices can have a major impact on funding strategies, as well. Will legislatures and boards allocate new funds for distance education? Will those "new" funds come at the expense of traditional programs? If new dollars cannot be allocated, is it possible for the institution to attract venture capital? What impact would such a move have on the institution's culture?

Some issues extend beyond the dollars themselves and relate to controlling fund allocation. If the modus operandi of the campus is to distribute funds to individual departments, it may be difficult for a cohesive e-learning program to develop across the institution. Holding funds at the institution or system level may make it possible to mount a major initiative, but the process could be at odds with a decentralized culture.

Attracting and motivating a new breed of entrepreneurial faculty is likely to be an important challenge, as well. Some faculty may be willing to trade security (i.e., tenure) for greater economic opportunities and payoffs. If they do not find these options within the academy, will they seek them in the dot-com world? Although new models for faculty recruitment and retention may be required, such approaches will be difficult, if not impossible, within the confines of traditional faculty governance and the existing employment rules in higher education.[17]

Perhaps the most challenging talent issue involves finding—and retaining—the necessary instructional support personnel (e.g., web designers, database managers, graphic designers, or instructional designers). Qualified individuals with these skills are in

short supply. Even when our institutions succeed in recruiting them, they are often hired away by competing businesses. If the instructional support organization is housed within the traditional academic structure, will there be the necessary latitude to attract and compensate the best talent? Or will state-mandated salary schedules, college/university benefit packages, and intellectual property policies be noncompetitive compared to other employers?

Selection of an organization and governance model that works for distributed education may not align with the existing culture of the institution. In some instances, distributed education may represent a logical extension of the historic mission. In others, online learning appears to be anathema to the ideal of close, personal relationships between students and faculty.

Distance education poses serious challenges to the alignment of these programs with existing academic, financial, and technology plans. If distance education is central to fulfilling the institution's mission, should it be organized and governed within the institution? Or do the needs for independence, speed, and agility override those concerns and argue for it being structured outside the traditional institution?

In the case of distance education, the governance issues are even more daunting.* Across the United States, colleges and universities have taken different approaches to establishing distance education organizations. Although the categories below do not describe all the detail or nuances possible, these general groupings describe most models.

Extensions of the traditional institution. A number of universities have created units that are extensions of the current college or university organization. These entities generally are located within the central administrative unit and tend to be funded through foundation or university monies. Colleges and universities using this approach include the University of Illinois, University of California-Berkeley, UCLA, the University of Texas, and the State University of New York (SUNY).

Not-for-profit subsidiaries. Several universities have established distance education programs in not-for-profit organizations that are separate from the university. These entities are essentially new businesses with a mission and culture distinct from the traditional university. Institutions using this model include Pennsylvania State University's World Campus and the University of Wisconsin's Learning Innovation Center.

For-profit subsidiaries. In an effort to improve organizational responsiveness and attract capital, a growing number of traditional institutions, both public and private, are creating for-profit spin-offs. Institutions using this approach include the University of Nebraska, Temple University, New York University, Columbia University, the University of Maryland, Stanford University, and Cornell University.

Virtual universities. More than a dozen states have launched virtual universities in an effort to address statewide policy issues such as workforce development. Aggregating content from state higher education institutions, virtual universities market courses to learners by developing and maintaining a single e-learning portal and course catalog. In some states, learners can even register for courses through the virtual university portal. States with virtual universities include South Dakota, Tennessee, Minnesota, Michigan, Kentucky, Florida, Georgia, and Arizona.[18]

In identifying the most appropriate governance structure, the institution should consider what degree of centralization/decentralization best meets its strategic goals. Should the gov-

* Here we are referring specifically to programs targeted at learners geographically removed from the traditional campus.

ernance be more ad hoc or is a centralized model better? Is the tradition for divisions and deans to have a great deal of autonomy, or is there an institution-wide approval process that is intended to provide coordination and avoid duplication and waste of resources? Considering the resource base of most institutions, it may be difficult or impossible to support and sustain multiple distance education programs on a single campus.

Another key question is whether the organization managing distance education should reside within or outside of the existing institution. If managed inside the existing institution, will long-established rules and processes limit success? If the organization lies outside of the existing institution, are faculty involved? If so, how? Who is responsible for educational quality and curricular issues? Should the entity be not-for-profit or for-profit? If the institution is for-profit, will institutional funds be used as start-up capital? If profits are made, will they be returned to the institution? If no profits are made, how does the institution justify the funds it initially invested? Although the flexibility associated with an independent 501(c)3 or a for-profit venture may be preferable (e.g., attracting venture capital), it may not be politically viable.

An important role of governance is to identify those who are decision makers. Creating a matrix of responsibilities and agreeing on who makes what decisions speeds the decision-making process and reduces the divisiveness of issues ranging from program planning to technology delivery. Although the right mix of responsibilities will vary from campus to campus, the following groups may be appropriate decision makers for the issues listed below.

Note that although many distributed education discussions seem focused on the technology, most of the issues and those responsible represent the traditional academic groups. Distributed education is fundamentally an academic issue, not a technological one. Although IT may be the stimulus or change agent, the essential matters are complex and will be the purview of academics.

In a growing number of cases, a separate distance education organization is established to provide marketing and services as a complement to the traditional academic enterprise. Because distributed learning is often thought of as being driven by technology and technologists, it is important that we not confuse academic prerogatives with marketing or technology functions. Drawing clear distinctions between academic and nonacademic activities helps.

Issue	Responsible Group
Marketing and market evaluation	System office, president, program leaders
Program planning	Academic affairs
Technology delivery	IT organization
Professional development	Academic affairs, teaching & learning (T&L) centers
Student support	Student affairs, academic affairs
Content development	Faculty, T&L centers
Teaching/mentoring	Faculty
Library	Library, academic affairs
Licensing	Library, legal staff

Partnerships

With distributed education, partnerships are essential. Although in prior years there was no alternative but for educational institutions to provide all "learner services," now a plethora of alternative providers exist (e.g., Embark.com for online recruiting, Tutor.com for tutoring, and edu.com for purchasing goods). In addition to services, distributed education calls for a unique blend of technology, entrepreneurism, capital, and market savvy. Few institutions have all of these skills in house. Partnerships can provide higher education institutions the services they require and can allow them to manage the risk inherent in this fast-paced environment. These services may range from online admissions to textbook sales to career services. The table below highlights several categories of services and offers examples of firms that provide them.[19]

In the past year, over a hundred e-learning firms entered the education space.[20] New ventures are constantly surfacing and existing ones are merging, being bought out, or quietly disappearing. The churn in this market is staggering. Monitoring these alternative providers is challenging; knowing with whom to partner is an even more daunting task.

Collaboration with other entities also can help educational institutions round out their distributed education programs. It is not just with whom the institution has a relationship, but the nature of that relationship, that is important. Although the term "partnership" is used often, many relationships between suppliers and educational institutions focus on obtaining the lowest cost for goods or services. Others involve performance contracts, such as outsourcing web hosting or tailoring standard products for specific institutions (e.g., a

Service	Providers
Online applications	Embark.com College.net XAP
Campus-based portals	Campus Pipeline Jenzabar Studentonline.com
Online procurement	Ariba CommerceOne Freemarkets
Online course delivery	Web CT Blackboard Eduprise eCollege
Supplemental content providers	PinkMonkey.com CliffNotes.com Thinkwell.com InstantKnowledge.com Versity.com
Online libraries	Questia.com NetLibrary.com ebrary.com
Online textbook distributors	VarsityBooks.com Textbooks.com
Advising and tutoring	SmartThinking.com Tutor.com DegreeNavigator

to Ask:

- What do we really mean when we talk about partnerships?
- Does our institution have a good track record with partnerships? How might we improve?
- What value do we bring to potential partners? Is there sufficient value to sustain the relationship over time?

PeopleSoft implementation). Strategic alliances, in which both parties bring unique expertise to a relationship, increasingly are necessary.

Partnerships are a way for organizations to share risk and leverage each other's expertise. Many Internet start-ups are being provided with content through partnerships with educational institutions. In these cases, the structure, marketing, and new business models may come from the start-ups and the content from stable, highly reputable academic institutions. Unext.com provides online business education for corporate clients through a virtual community known as Cardean University. Cardean's academic partners include Columbia University, the University of Chicago, Stanford University, the London School of Economics and Political Science, and Carnegie Mellon University. Quisic (formerly University Access) works with the London Business School, the Anderson School of Management (UCLA), the Marshall School of Business (University of Southern California), and the Kelley School of Business (Indiana University).

Partnerships may form between a higher education institution and a vendor, or among academic institutions. By entering into partnerships or consortia, educational institutions can leverage their collective market size and strength, reducing risk and sharing resources. There are many examples of consortia, one of the largest being the Electronic Campus of the Southern Regional Education Board (SREB). The concept behind the Electronic Campus is to use the "connectedness" of SREB and the region's colleges and universities to establish a regional marketplace, which reduces barriers to learning, increases access, and encourages the sharing of resources. Today, more than 260 colleges and universities are involved with the Electronic Campus. More than 3,000 courses are offered across 100-plus degree programs.

Other consortia focus on specific disciplines, a particular set of institutions, or a geographical area. The Associated Colleges of the South has, for example, formed a consortium to offer a comprehensive classics major via the Internet to students in residence on its member campuses.

Can higher education learn to partner effectively with other not-for-profit and for-profit ventures? Its track record has not been good. Although there are a growing number of partnerships, how well the goals of academic institutions and for-profit ventures align is open to question. How smooth are the working relationships between 20-somethings from start-ups and senior faculty? Can higher education manage relationships in a business environment? Effective online learning models will rely heavily on the ability to collaborate and coordinate with external entities. If higher education develops that ability, new opportunities and leveraging will result, increasing the likelihood of success. The jury is still out on whether our institutions can develop these skills.[21]

Quality

When considering distributed learning, quality can become a sensitive topic. Some institutions' concerns are due to a lack of experience with the web. Others worry that the ease of distribution might allow less reputable organizations to lure learners to a potentially low-quality product.

In a recent National Education Association (NEA) poll of instructors who teach distance learning courses, three-quarters were positive about distance learning. One common reason cited was that technology can extend educational opportunities to students who cannot take courses in a traditional, onsite setting. The most significant finding was that quality and access are central considerations that dictate how faculty members feel about teaching and learning, regardless of whether the forum is a traditional classroom or an online environment. Faculty surveyed believed web-based courses do a better job of giving students access to information, helping them master the subject, and addressing a variety of learning styles. However, they believed traditional courses do a better job of strengthening group problem-solving skills, verbal skills, and oral presentation abilities.[22]

Measures of learning—and of quality—are elusive and often controversial in higher education. For example, attempts to measure the value that has been added by a course or a degree program typically are received with skepticism. The quality of the student body is considered a prime determinant of the quality of education a student receives. However, there are few answers for questions such as whether this cohort effect is stronger or weaker in a distributed learning environment. Yet, in all fairness, there are few studies that measure the effectiveness of textbooks and lectures as an educational delivery system.

Providing adequate academic and student services to distance learners is a critical quality issue. The needs of students enrolled in distance learning programs carry implications for existing library, academic advising, career counseling, financial aid, registration, and other operations. Do distance learning students need the same services as on-campus students? How do we ensure that online students receive the level and quality of services necessary to meet their needs? What feedback mechanisms can be incorporated into delivery systems to facilitate maintaining a focus on the student, as opposed to the institution?

Quality assurance has been the responsibility of regional accreditation agencies. Appendix 2 summarizes the distance education guidelines used by regional accrediting associations which are based on the *Principles of Good Practice* developed by the Western Interstate Commission on Higher Education. However, their definitions of quality are based on an environment in which institutions have a physical presence and geographic service areas minimize competition. What new metrics will be needed to assess the quality of distributed learning programs? Should we evaluate the institution, the course, or the instructor? Could the assessment of quality become a

to Ask:

- What kinds of quality measures will be most important for learners? for accreditors? for institutional self-improvement?
- Do our definitions of quality replicate the existing bricks-and-mortar model, or are we taking into account the unique strengths (and weaknesses) of distributed education?
- As we better define quality in distributed education, how do we ensure those definitions are used by accrediting agencies?

source of academic transformation? In an effort to focus more directly on student learning outcomes, the Council of Higher Education Accreditation (CHEA) recently recommended a new set of guidelines[23] (see Appendix 3).

There are many more questions than answers about quality associated with distributed education. However, a study conducted by the Institute for Higher Education Policy identified 24 characteristics that were associated with effective distributed learning. The benchmarks fall into categories such as institutional support, course development, student support, and assessment[24] (see Appendix 4).

Although many conversations about quality are internal, there is a public dimension as well. What responsibility do our institutions have to apprise students of the quality of the online course in which they are enrolling? In the Information Age, does the institution have the responsibility to inform the student when a course does *not* take advantage of Internet capabilities and resources? Higher education may have the first – but not the only – opportunity to provide the kind of "consumer information that should be made available to potential learners so they are better able to select among the bewildering array of options before them."

Policies

Predicated on a world of site-based programs and print-on-paper resources, many of higher education's current policies may not be viable in an online environment. A multitude of policy issues associated with distributed education exists–ownership of intellectual property, conflict of interest, workload, accessibility, and appropriate use, to name a few–ranging from department-based policies to national ones.

Intellectual property. Of many policy issues, intellectual property has drawn the most attention. Intellectual property issues associated with distributed education may involve patent, copyright, and software infringement; for some institutions, their trademark, multimedia, and videotaping policies may be affected as well.[25]

The American Association of University Professors (AAUP) recommends that the copyright of materials produced by faculty should belong to them, except in specific instances, such as when it is a work for hire.[26] Certain circumstances, such as when faculty use technical and/or design experts employed by the institution, may affect faculty ownership of intellectual property. Some institutions are developing conflict of commitment and conflict of interest policies that may transcend intellectual property policy issues. (For a synopsis of intellectual property, conflict of commitment, and conflict of interest policies, see Thompson in *Educom Review*, March/April 1999. Details can be found in Appendix 5.)

Fair use. Educators often have incorporated the copyrightable works of third parties in

When reviewing intellectual property policies, institutions should

- Make clear what is intellectual property and the circumstances under which the institution will assume the costs of protecting intellectual property.
- Define inventor and author rights including rights of revision and adaptation, reproduction, display, and ownership.
- Spell out the role and rights of professional staff in the creative/technical process of course design and development.[27]
- Identify when and how the institution can use intellectual property generated by faculty.
- Explain how faculty will be compensated for the development and preparation of distributed learning courses and how the parties will share in any royalties generated.
- Identify who will administer the institution's intellectual property policies.
- Clarify how the inventor or author can use the institution's trademarks (e.g., name and logos) when commercializing a work.[28]

their courses, relying on the Fair Use Act to avoid copyright violation. However, determining what constitutes fair use has become more difficult in the era of distributed education. For example, an online course that will be marketed to other institutions may be deemed commercial, making a claim of fair use unviable.[29] Significantly, the 2000 Digital Millennium Copyright Act does not allow fair use of electronic materials.

Faculty issues. There is an assortment of faculty policies associated with distance education. These include policies related to workload, compensation, and support. Common questions include

- Will teaching load credit be given for distributed education course development?
- How much credit for online development will be given during the promotion and tenure process?
- Will the institution recognize that workload may increase with online courses?
- How will class size be affected by online instruction?
- What type of technical support and training will be provided?[30]

A key issue for faculty is their role in the development and delivery of courses. In 1999, an AAUP committee proposed that policies associated with distance education state that the faculty role in distance education courses should be the same as in traditional classes, with the faculty retaining their usual responsibilities for choosing and presenting material.[31]

Student issues. Distributed learning also raises a series of student issues. Although many faculty and policy makers have advocated for distributed education as a way to increase access to educational opportunities, will poor or less educated students have access to computers and online services, allowing them to participate in online programs? Will these students need academic support? Will it be available to them at a distance just as readily as if they were on campus? What is the institution's responsibility for ensuring that all students have access distributed learning opportunities equally? Fairleigh Dickinson University and some Canadian institutions are beginning to require students to take one course each year online. The rationale is that students need to master online learning because much of their future professional education will be in this format.

Disability issues. The Americans with Disabilities Act (ADA) guidelines must be adhered to for distance education courses.[32] Specific guidelines are available—for example, not using graphics that cannot be seen by those who are visually challenged or substituting text for sound to accommodate those who are deaf or hard of hearing. Most material is now being designed to comply with ADA guidelines. However, no one knows what the costs might be of modifying the thousands of instructional applications and hundreds of thousands of web pages already in existence.

Financial aid. Financing for individual students can be a problem with distributed education. Federal financial aid does not extend yet to many distance education courses. To qualify for federal aid, students must be enrolled in accredited programs. Will this constrain students who are considering the plethora of new providers in the market, or is it a legitimate form of quality control? Federal financial aid is only available at institutions that offer at least half of their courses onsite. Is such a rule still relevant? Some institutions fear that we will soon face even greater problems with financial aid as technology releases students from a specified amount of "seat time."[33]

Privacy and security. Issues of privacy protection and Internet security are worrisome for those offering distributed education courses. The practice of some for-profit companies to track student interests through "cookies" illustrates one stimulus for unease. "Cookies" allow web managers to develop a profile of a user's Internet activities; this information can then become the basis for customized

advertising solicitations. Privacy concerns now have expanded to many previously innocuous areas such as what students purchase or what books they check out of the library.

With the advent of online admissions, registration and payment systems, privacy and security have taken on additional significance. As a result, many institutions encrypt data while in transit to protect privacy and the confidentiality and integrity of data.

The National Education Association has developed guidelines for security and privacy policies, designed to protect both an institution's records and individual students. In fact, all institutions should adopt privacy policies that include an Acceptable Use Policy (e.g., not using institutional resources for commercial gain or private profit) for computing resources, as well as "rights and responsibilities" statements that define accountability and responsibility practices for both providers and consumers of computing resources.[34]

Accreditation. Policy issues go well beyond the campus to include state regulations and regional accreditation. For example, an institution that is considering offering distance education courses in another state or country must determine whether it needs approval from accrediting organizations or higher education boards in the areas they are targeting. Accrediting bodies are considering alternative guidelines to accommodate distance learning institutions. Already some for-profit online programs have received accreditation (e.g., Jones International University and Harcourt Learning Direct).

Financing. Perhaps as complex as the academic policy issues are those involving finance. Distributed learning requires a significant upfront investment in technology. Without robust networks, scalable applications, and adequate user support, an institution might be well-advised not to begin. Certainly, the technology components alone raise a series of financial questions. Beyond funding the start-up cost, should distance learning students be charged the same tuition/fees as those for an on-campus course? If student location is irrelevant, can the institution attract more learners by eliminating tuition differentials between in- and out-of-state students? Should students be required to pay fees for services they are not ever likely to use (e.g., athletic facilities or parking)? We are beginning to see the unbundling of some services from tuition/fees and the emergence of third-party providers of certain student services.

There are major policy issues as well as more tactical decisions that carry budgetary implications. For example, should a campus require laptop computers for all students? If so, is it at the student's expense or that of the institution? Whether or not computers are required, should the institution standardize hardware and software in an effort to limit the cost of providing faculty and student support?

Even if an institution decides to forego entry into distance education or distributed learning, few parts of the institution will be untouched by technology-related policy questions. Although all policy issues cannot be detailed here, many others will be described in a later paper in this series. For example, what relevance do residency requirements and geographic service areas have in an anytime, anyplace world? Should faculty be expected to teach in an online environment? Can they be required to do so if not hired under that premise? In an environment in which cyber law is not yet clear, it is difficult for our institutions to make well-informed choices.

to Ask:

- What policies need to be rethought in a digital versus print environment?
- Are we looking at both "big" policy issues (e.g., ownership of intellectual property as well as tactical policies (e.g., technology standards) across the institution?
- How might student financing change to accommodate distributed learning?

Barriers

There are numerous barriers to distributed education. Many stem from faculty concerns; others are artifacts of an organizational and financial structure that was designed in a former era. It is a challenge to know which barriers derive from resistance to change and should be set aside, as opposed to those that represent serious concerns requiring thoughtful deliberation. Some barriers will need to be addressed whether or not the institution moves forward with distributed education.

Faculty concerns. Faculty express many apprehensions about distributed education. For example, depersonalization of education is sometimes cited as a concern, particularly when faculty perceive that online dialogue will replace face-to-face interaction. Others fear that they themselves might be replaced. There also is suspicion that distributed learning will be mandated, rather than put forward as an option for faculty and students. In consensus-based institutions, the inability to address faculty concerns or the lack of faculty buy-in cannot only stall a distributed education initiative but also can be career-threatening to the administrator who promotes them.

Articulation. A major barrier to the widespread use of web-based education is the absence of articulation policies within and among states. Broad articulation agreements are rare and their absence creates a high barrier to expanded student participation. Concerns about reduction of revenue or loss of academic quality control often inhibit the adoption of such agreements. For distributed education to attain its full potential, states and institutions will need to remove policy barriers to the free exchange of credits; this includes both credit acceptance and tuition policy.

Financing. Distributed education can be an expensive proposition. Although institutions are creating digital infrastructures, significant investment is required to establish successful and scalable distributed education programs. When campus resources are already stretched, being able to finance what may seem to be a secondary enterprise is problematic. Beyond base funding, how the costs and revenues of distributed education programs are divided is a topic of significant debate. In addition, what are the appropriate financial incentives for faculty, if any?

Human resources. Distributed learning organizations often seek to develop an entrepreneurial culture as well as to attract technical talent. What might we change to make our institutions more desirable places of employment? A second critical issue entails recruiting and retaining the necessary human resources. At some institutions, salaries and benefits are lower than in local private sector jobs. Compounding the compensation issue is a tendency for salary scales to be based on seniority, while some of the most talented technology staff may be under 30. With many companies offering stock options and hiring bonuses, educational institutions are at an even greater disadvantage than in previous years.

Digital libraries. Contrary to popular myth, no comprehensive digital library currently

to Ask:

- Which of the barriers to distributed education can be addressed through our current educational structures? Which would benefit from external assistance?
- What kinds of processes will enable us most effectively to address specific barriers?
- What is the potential liability if a barrier is not addressed?

exists, nor is it likely to develop on the web in the foreseeable future. Perhaps the greatest obstacle to creating a complex and comprehensive set of distributed learning offerings lies in meeting the information needs of students in an electronic medium. While many campuses have defined initial approaches to offering courses over the Internet, few, if any, have defined a scalable and viable strategy for making information resources available to these distant learners. Current copyright limitations make electronic access extremely difficult.

Political barriers. Particularly for state-supported institutions, political barriers to distributed education can arise. In some cases, resistance to an alternative form of learning develops. In other cases, governors, legislators, or other influencers may impose solutions on academic institutions. New funds for e-learning programs are oftentimes accompanied by demands for accountability. If institutions must be accountable, what are the relevant measures of success? What is a reasonable timeframe for producing results? The difficulty of managing campus expectations for distributed learning may be magnified many times when dealing with a board of trustees or with state legislators.

Process. Distributed learning can be a highly emotional topic for both supporters and critics. As a result, the process by which these discussions are introduced to various groups (e.g., faculty, board members, or legislators) must be crafted thoughtfully. In many respects, the buy-in process appears to be a "pay now or pay later" approach. Institutions can engage in discussion and buy-in on the front end of announcing a distributed learning initiative or they can announce a program and spend the next several months (or years!) dealing with the resistance generated by not involving the appropriate groups.

Transformation. Until the educational process becomes learner-centered, in the classroom and at the institutional level, we may not realize the full value of distributed education. Distributed learning challenges our institutions not only to look at new ways of doing what we have always done, but also to look at doing new things. Should we use fewer lectures and invest more in collaborative learning? Would learning be more effective if we altered the lecture-laboratory-recitation model to a hands-on integrated approach? Students with an Information-Age mindset expect education to emphasize the learning process more than a canon of knowledge. They want to be part of learning communities, rejecting the broadcast paradigm of television (or the note-taker in the lecture hall). We will be challenged to transform many of our underlying processes (e.g., registration and residency), as well.[1]

Values/culture. One of the fundamental challenges with distributed learning may be a matter of values. Today's higher education leaders have a particular definition of education and a set of values that derive from our experiences in the 1950s, '60s, and '70s. We are now dealing with the first generation of students who have never known life without PCs (created in the '70s) or the Internet (largely a '90s phenomenon).

Leadership Challenges

For presidents and chancellors, distributed learning brings multiple leadership challenges. These range from traditional academic issues to change management to financing information technology.

One of the first challenges facing institutional leaders is how to find the time to understand distributed learning in sufficient detail to lead their institutions. Although the president or chancellor need not be an expert on the subject, it will be important to have enough background—and time for reflection—to be comfortable with the subject and associated issues. In an environment rife with hype and hyperbole, to whom does one listen? And, perhaps more difficult, how does one find time for education and reflection? (See resource list in Appendix 5.)

It is not just the president who may need a primer on distributed learning. What about board members, legislators, or influential alumni? It is all too common for those outside the institution to believe that easy answers to distributed learning challenges can be found. Those who believe that a professor can be replaced by a web site or a CD-ROM misunderstand the fundamentals of education.

The assumptions we make about education and distributed learning often blind us to new opportunities. How does the president help his or her faculty, administrators, and staff see beyond the status quo? In many situations, good ideas are squelched because those involved in task forces or committees fear how they will be regarded by their colleagues (or administrators). By what process can we empower individuals to propose creative, out-of-the-box solutions?

Leaders must take responsibility for designing a process that will allow individuals to feel that they have had a role in crafting the institution's solution to distributed learning. Who must be involved? How does one engage a wide range of constituencies without paralyzing the process? What is the appropriate balance of discussion, deliberation, and decision making?

Of course, making any decision can be dangerous for institutional leaders. Although we may strive for consensus, it rarely exists. How many leaders are paralyzed at the thought of announcing a distributed learning strategy? Is announcing a plan—no matter how thoroughly discussed—tantamount to putting a target on your back? As many have learned, even opening discussions about distributed learning can be unsettling.

Institutional leaders will be called upon to maintain a balance among their different constituencies. Should the enthusiasm of the board, for example, outweigh the concerns of the faculty? If the governor seeks to pursue an agenda including distributed education, how can this be blended with the desires of parents or alumni? Distance education can be a polarizing issue: the challenge—maintaining balance—is very real.

Consistency and communication likely will evolve as leadership challenges for distributed education. For example, it is atypical for all groups to have the same definition—much less

to Ask:

- Whose assistance and support will institutional leaders need to effect cultural change?
- Is the risk involved with distributed education worth the potential gain? Is there a choice?
- How can leaders in higher education join forces to address these challenges?

expectation--of distributed learning. Institutional leaders will find that consistency of message and repeated communication can help.

Cultural change is one of the most significant challenges that institutional leaders will face. How does one take a group that is oftentimes averse to risk and unleash an entrepreneurial, nimble, and responsive organization? For faculty who are most comfortable with autonomy, what is the process for forming (and sustaining) teams or even partnerships with vendors or other institutions?

It is important that institutional leaders raise troublesome issues to the national level, as well. Some of the challenges associated with distance education (e.g., financial aid, accreditation, and articulation) may require regional or national action. The collective action of higher education leaders can focus attention on these challenges and move distributed education forward.

Conclusion

The educational opportunities that distributed learning affords are exciting, but institutions face significant obstacles that need to be addressed before such prospects can be made real. Among the challenges are the development of

- Viable organizational, governance, and business strategies.
- Appropriate definitions of intellectual property rules with faculty and other developers.
- Teaching modalities that recognize new styles of learning.
- Suitable online student services and support structures.
- Adequate faculty support structures.
- Meaningful assessment metrics.
- Articulation agreements defining what and how many courses will be accepted and transferable for a degree.
- Policies regarding administration of financial aid.

While there may be responses to each of these challenges, not all answers are likely to be compatible within the traditional cultures, structures, and processes of our colleges and universities. How do higher education institutions develop a proactive direction that harmonizes with the existing culture and values? The National Learning Infrastructure Initiative's (NLII's) 12 conditions for change found in Appendix 6 express the conviction that the entire institutional "system" must adapt for the venture to succeed.[36]

Although culture and technical readiness for distributed education are not trivial issues, policy issues—and the resulting legislation—may be as difficult. Policies designed to remove the barriers to widespread adoption of distributed education must come from all levels—federal and state governments, policy agreements among the states, and state university systems—as well as from the institutions themselves.

Distributed education can bring many benefits to higher education, such as

- Enhanced learning experiences.
- Improved access to education.
- Greater learner flexibility.
- Expansion of education to new groups.
- Increased interaction and collaboration.

Distributed education will be part of higher education's future. With careful planning, judicious choices, and resolute execution, that future will be a positive one for our institutions, as well as for those we serve.

Appendix 1

Comparison of Target Markets Among Selected Educational Providers

Educational Enterprise	Corporate learners	Professional enhancement learners	Degree-completion adult learners	College experience learners	Pre-college (K–12) learners	Remediation and test prep learners	Recreational learners
Education Companies							
Caliber	X	X					
Pensare	X						
Unext	X						
Smart Force	X						
Quisic	X		X				
Headlight		X					X
OnlineLearning.net		X					
Higher Education Institutions*							
University of Maryland University College	X	X					
New York University	X	X					
Pennsylvania State University		X	X				
University of Wisconsin	X		X				
University of Nebraska			X		X		
University of Texas			X	X			
University of California, Berkeley		X					X
UCLA		X					X
University of Illinois		X	X	X			
Columbia University	X	X	X				
Carnegie Mellon University	X	X	X				
University of Phoenix		X	X				

** Some ventures are for profit; others are not-for-profit.*

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Appendix 2
Guidelines for Distance Education

To facilitate the evaluation of distance education throughout the United States, regional accrediting associations have agreed upon the following guidelines. Any institution offering distance education is expected to meet requirements of its own regional accrediting body and be guided by the Western Interstate Commission for Higher Education (WICHE) Principles. In addition, an institution is expected to address, in its self-studies and/or proposals for institutional change, the following expectations, which will be reviewed by its regional accrediting commission.

Evaluation and Assessment

- The institution assesses student capability to succeed in distance education programs and applies this information to admission and recruiting policies and decisions.
- The institution evaluates the educational effectiveness of its distance education programs (including assessments of student learning outcomes, student retention, and student satisfaction) to ensure comparability to campus-based programs.
- The institution ensures the integrity of student work and the credibility of the degrees and credits it awards.

Curriculum and Instruction

- Programs provide for timely and appropriate interaction between students and faculty, and among students.
- The institution's faculty assumes responsibility for and exercises oversight over distance education, ensuring both the rigor of programs and the quality of instruction.
- The institution's faculty ensures the currency of materials, programs, and courses.
- The institution's distance education policies are clear concerning ownership of materials, faculty compensation, copyright issues, and the utilization of revenue derived from the creation and production of software, telecourses, or other media products.
- The institution provides adequate and appropriate training for faculty support services specifically related to distance education.
- The institution provides appropriate training for faculty who teach in distance education programs.

Adapted from Statement of Commitment by the regional accrediting commissions for the evaluation of electronically offered degree and certificate programs, http://www.wiche.edu/telecom/article1.htm.

Library and Learning Resources

- The institution ensures that students have access to and can effectively use appropriate library resources.
- The institution provides laboratories, facilities, and equipment appropriate to the courses or programs.

Student Services

- The institution provides an adequate means for resolving student complaints.
- The institution provides advising, recruiting, and admissions information that adequately and accurately represents the programs, requirements, and services available.
- The institution ensures that students admitted possess the knowledge and equipment necessary to use the technology employed in the program and provides aid to students who are experiencing difficulty using the required technology.

Facilities and Finances

- The institution possesses the equipment and technical expertise required for distance education.
- The institution's long-range planning, budgeting, and policy development processes reflect the facilities, staffing, equipment, and other resources essential to the viability and effectiveness of the distance education programs.

Appendix 3

Council for Higher Education Accreditation Competency Standards Project

The Council for Higher Education Accreditation (CHEA) and the National Center for Higher Education Management Systems (NCHEMS) have designed and tested an alternative approach to accreditation standards and review.[37] This model places significant emphasis on student outcomes and delivery via distance education. The competency standards were organized in three main areas of institutional performance:

- Student outcomes and attainment.
- Responsiveness to students.
- Organizational alignment and support.

Below is a summary of these areas and specific standards under each.

Student Outcomes and Attainment

The institution's graduates meet clear standards of achievement that are demonstrable through explicit assessments of performance. Student outcomes and attainment is a critical aspect of institutional performance and embraces (a) how standards of achievement are established and their rigor; (b) how student achievement is assessed and therefore certified; and (c) how well students actually perform against established standards.

Specific standards include

- Each degree or credential is defined in terms of an identifiable, discrete set of specific outcomes with clear, acceptable standards of achievement.
- Each degree or credential requires successful student completion of a defined assessment or set of assessments that covers the learning outcomes identified.
- All assessment methods and instruments used to determine student achievement strive toward being valid, reliable, and demonstrably linked to the learning outcomes that they purport to cover.
- Criteria for evaluating student performance on assessments are clearly established, are stated in the institution's publications, and are generally understood by students and staff.
- Students meet established academic standards as evidenced by their performance on assessments.
- The institution ensures the portability of its degrees, certificates, or other means of credentialing achievement through articulation with other institutions and, where appropriate, through linkages with the workplace.
- Each field of study (e.g., sociology or electrical engineering) has been thoroughly analyzed by acknowledged experts drawn from the academy and/or associated practical applied fields in order to identify the requisite knowledge and skills that define effective performance in the institution's programs in that field (e.g., through a job analysis or skills inventory).

Adapted from Council for Higher Education Accreditation. (2000, August). The competency standards project: Another approach to accreditation review. (Occasional Paper). Washington, DC: Author.

- Acknowledged experts in assessment, in partnership with subject matter experts, are responsible for setting achievement standards and for the selection or design of all assessments.
- Assessments are reviewed and updated periodically to ensure they are current with changes in the field and in relevant assessment technology.
- The institution regularly benchmarks its learning experiences and assessment outcomes against those of other institutions, as well as against industry and professional standards.
- Internal pass rates on assessments are regularly analyzed and results are used to improve learning processes, the assessment process, and associated achievement standards.

Responsiveness to Students

The institution offers an appropriate and effective range of structures and services that accommodate and support self-paced student learning.

Specific standards include

- The institution ensures that students fully understand what specific areas of knowledge and skills are required by the various programs of study.
- Students are regularly assessed to determine whether gaps in their current learning exist.
- Students are successful in locating appropriate learning experiences consistent with the competencies they wish to master—either from the institution itself or from another learning provider.
- The institution ensures that students are properly prepared for assessments by periodically evaluating their readiness through an appropriate mentorship process.
- Learning opportunities actively promote student success by accommodating individual learning needs and contexts.
- Learning opportunities allow students to appropriately embody prior experience, with certifications of attainment based in part on demonstrable past achievement.
- Students have access to "learning-to-learn" strategies—either provided by the institution or available through third parties—and these are effective in raising student success rates.
- Students are satisfied with their experiences with the institution. The essence of this standard is the degree to which the institution has established methods for "listening to its customers" and that its students are in fact satisfied.
- Learning opportunities clearly identify the subject matter to be covered, the skills or knowledge to be acquired, and the learning methods used.
- The process used within learning opportunities emphasizes mentorship as well as "transmission of knowledge."
- Learning opportunities relate to a clear individual learning trajectory by reinforcing important concepts, promoting active learning, and accommodating differences in student characteristics and abilities.
- Learning opportunities are systematically reviewed in order to ensure their quality and continuing relevance.
- Clear policies and practices define the institution's obligations to its students.
- The institution identifies, communicates, and regularly assesses standards for satisfactory academic progress.
- The institution has clear procedures for addressing student grievances.

Organizational Alignment and Support

The institution ensures that high levels of student achievement and student learning can be sustained on a continuing basis through appropriate organization, energetic leadership, and consistent action.

Specific standards include

- The institution's mission clearly articulates a commitment to responsiveness to students and outcomes-based instructional approaches that clearly distinguish it from traditional seat-time, credit-hour-based institutions.
- The institution's leaders ensure that its core functions and decision-making processes are demonstrably aligned with its mission and core values, and with one another.
- The institution's budgetary and organizational structures are clearly aligned with and are configured to support appropriate levels of student achievement and responsiveness to students.
- The institution identifies clear standards for evaluating key staff that are based on their effectiveness (including student satisfaction) and regularly assesses their performance on this basis.
- A process for assessing student and stakeholder satisfaction and performance is in place, such as tracking students who move into the workplace or subsequent educational endeavors.
- The institution has mechanisms for gathering and analyzing information about its own operations and effectiveness and uses this information to continuously improve itself.

Appendix 4

Measures of Quality in Internet-Based Distance Learning

With the worldwide growth of distributed learning, attention is being paid to the nature and quality of online higher education. Twenty-four benchmarks were identified in a study conducted by the Institute for Higher Education Policy. To formulate the benchmarks, the report identified first-hand, practical strategies being used by U.S. colleges and universities considered to be leaders in online distributed learning. The benchmarks were divided into seven categories of quality measures.

Institutional Support Benchmarks

1. A documented technology plan includes electronic security measures to ensure both quality standards and the integrity and validity of information.
2. The reliability of the technology delivery system is as close to fail-safe as possible.
3. A centralized system provides support for building and maintaining the distance education infrastructure.

Course Development Benchmarks

4. Guidelines regarding minimum standards are used for course development, design, and delivery, while learning outcomes–not the availability of existing technology–determine the technology being used to deliver course content.
5. Instructional materials are reviewed periodically to ensure that they meet program standards.
6. Courses are designed to require students to engage themselves in analysis, synthesis, and evaluation as part of their course and program requirements.

Teaching/Learning Benchmarks

7. Student interaction with faculty and other students is essential and is facilitated through a variety of ways, including voice mail and/or e-mail.
8. Feedback to student assignments and questions is constructive and provided in a timely manner.
9. Students are instructed in the proper methods of effective research, including assessment of the validity of resources.

Course Structure Benchmarks

10. Before starting an online program, students are advised about the program to determine if they possess the self-motivation and commitment to learn at a distance and if they have access to the minimal technology required by the course design.
11. Students are provided with supplemental information that outlines course objectives, concepts, and ideas, and learning outcomes for each course are summarized in a clearly written, straightforward statement.

Adapted from Institute for Higher Education Policy. (2000, April). Quality on the line: Benchmarks for success in Internet-based distance education. Washington, DC: Author.

12. Students have access to sufficient library resources that may include a "virtual library" accessible through the web.
13. Faculty and students agree on an acceptable length of time for student assignment completion and faculty response.

Student Support Benchmarks

14. Students receive information about programs, including admission requirements, tuition and fees, books and supplies, technical and proctoring requirements, and student support services.
15. Students are provided with hands-on training and information to aid them in securing material through electronic databases, inter-library loans, government archives, news services, and other sources.
16. Throughout the duration of the course/program, students have access to technical assistance, including detailed instructions regarding the electronic media used, practice sessions prior to the beginning of the course, and convenient access to technical support staff.
17. Questions directed to student service personnel are answered accurately and quickly, with a structured system in place to address student complaints.

Faculty Support Benchmarks

18. Technical assistance in course development is available to faculty, who are encouraged to use it.
19. Faculty members are assisted in the transition from classroom teaching to online instruction and are assessed during the process.
20. Instructor training and assistance, including peer mentoring, continues through the progression of the online course.
21. Faculty members are provided with written resources to deal with issues arising from student use of electronically accessed data.

Evaluation and Assessment Benchmarks

22. The program's educational effectiveness and teaching/learning process is assessed through an evaluation process that uses several methods and applies specific standards.
23. Data on enrollment, costs, and successful/innovative uses of technology are used to evaluate program effectiveness.
24. Intended learning outcomes are regularly reviewed to ensure clarity, utility, and appropriateness.

Appendix 5

Resources for Distributed Learning

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Appendix 6

Twelve Conditions for Change

The following 12 conditions are indicative of the institutional characteristics that are essential to effective action in the knowledge-based economy in which higher education now operates:

Choices–Identifying a strategic direction and selecting a path to get there based on a clear sense of institutional mission.

Commitment–Allocating resources to enable the institution to adjust its course and to follow the path selected.

Courage–Energetic and focused leadership from the very highest level of administration.

Communication–Building a climate of trust by including the entire campus community in the transformation process through a carefully conceived and well-executed strategy for dissemination of information about extant and emerging services, plans, decisions, etc.

Cooperation–Collaborating across functions and throughout levels and constituencies to achieve a consistent and integrated set of support services for teaching and learning.

Community–Complementing the community of support nurtured through cross-functional collaboration with an equally cohesive community of faculty across disciplines.

Curriculum–Reconceptualizing the curriculum to reflect its distributed, interdisciplinary, and outcomes-oriented nature.

Consistency–Reflecting institutional commitment to transformation through consistent action and recognizing the importance of standards, within both the technology industry and the institution.

Capacity–Developing the teaching and learning capacity of the institution (e.g., curriculum and faculty) to serve student achievement and outcomes.

Culture/Context–Understanding the culture, values, and sensitivities of a given campus climate.

Complexity/Confusion–Overcoming the confusion associated with coping with transformation by adapting to the inherent complexity of the decision-making process by adopting more agile and responsive governance processes.

Creativity–Developing strategies and tactics that harmonize with the campus culture and context and recognizing that this is a creative, not *just* a political, process.[38]

Adapted from Barone, C.A. (2001, May/June). Conditions for transformation: Infrastructure is not the issue. *Educause Review, 36* (3), 40–47.

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